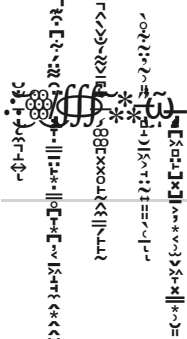


Fw: Starlink: Results of Initial Beta Testing

From: drmiano@yahoo.com <drmiano@yahoo.com>
To: Thoth IV Akhenaten VIII <akhenaten_viii@protonmail.com>
Date: Thursday, July 1st, 2021 at 12:46 PM

----- Forwarded Message -----
From: "M", Tristan-Gan MIANO from One Day, This Will Be Science Fiction <thoth@substack.com>
To: "drmiano@yahoo.com" <drmiano@yahoo.com>
Sent: Friday, March 5, 2021, 03:23:25 PM EST
Subject: Starlink: Results of Initial Beta Testing



Starlink: Results of Initial Beta Testing

Verdict: Cumbersome for most people to have, not great for apartments / urban dwelling. Low-frequency RF generates lots of very loud infrasound. (But so does modern wired internet nowadays).



"M", Tristan-Gan MIANO
Mar 5

Everyone is excited about Starlink. Indeed, I was / am so excited about new stuff (especially from the vaunted SpaceX, a company which is revered among techies), I was one of the initial sign-ons to the Beta for Starlink, a new Internet-provider and product developed by SpaceX. Besides that,

Comcast and AT&T haven't faced any serious competition in - how long now? Ever? And so I'm always happy to see the incumbency being challenged, and still hope to see more from SpaceX among any other challengers.

So, what's different about it? Why should I get this instead of what I already use? (And nearly 100% of everyone already has an internet provider of some kind). Why should I be forced to go through the already-painful and tedious process of cancelling one service and doing it all over again? Is it that much faster? Does it come with twice as many sports channels? Does it have HBO for free? Most people will be asking those kinds of questions for perfectly understandable reasons.

To be honest with you, I haven't even been able to cancel my *previous* Comcast subscription from my *old apartment* which I moved out of in December and replaced with AT&T in my new apartment (which I plan to keep using while I test Starlink).

So I'll start with the number one best thing about Starlink:

Set-up, provided you've carried it to where it needs to be, is almost instantaneous. The dish deploys itself, literally. It doesn't plug into anything besides the power, and requires no technician to come into your house. It comes with one heavy dish and one modem that are already connected the way they need to be.

Yes, I'm going at this from a product perspective, not the things engineers love. Who cares if it's a dish that fires a sonic laser into space? Normal people already assumed that was true for Dish Network or any other satellite provider (and is true for the most part). So the only difference here is that Starlink provides generic internet service rather than a particular kind of "cable" TV.

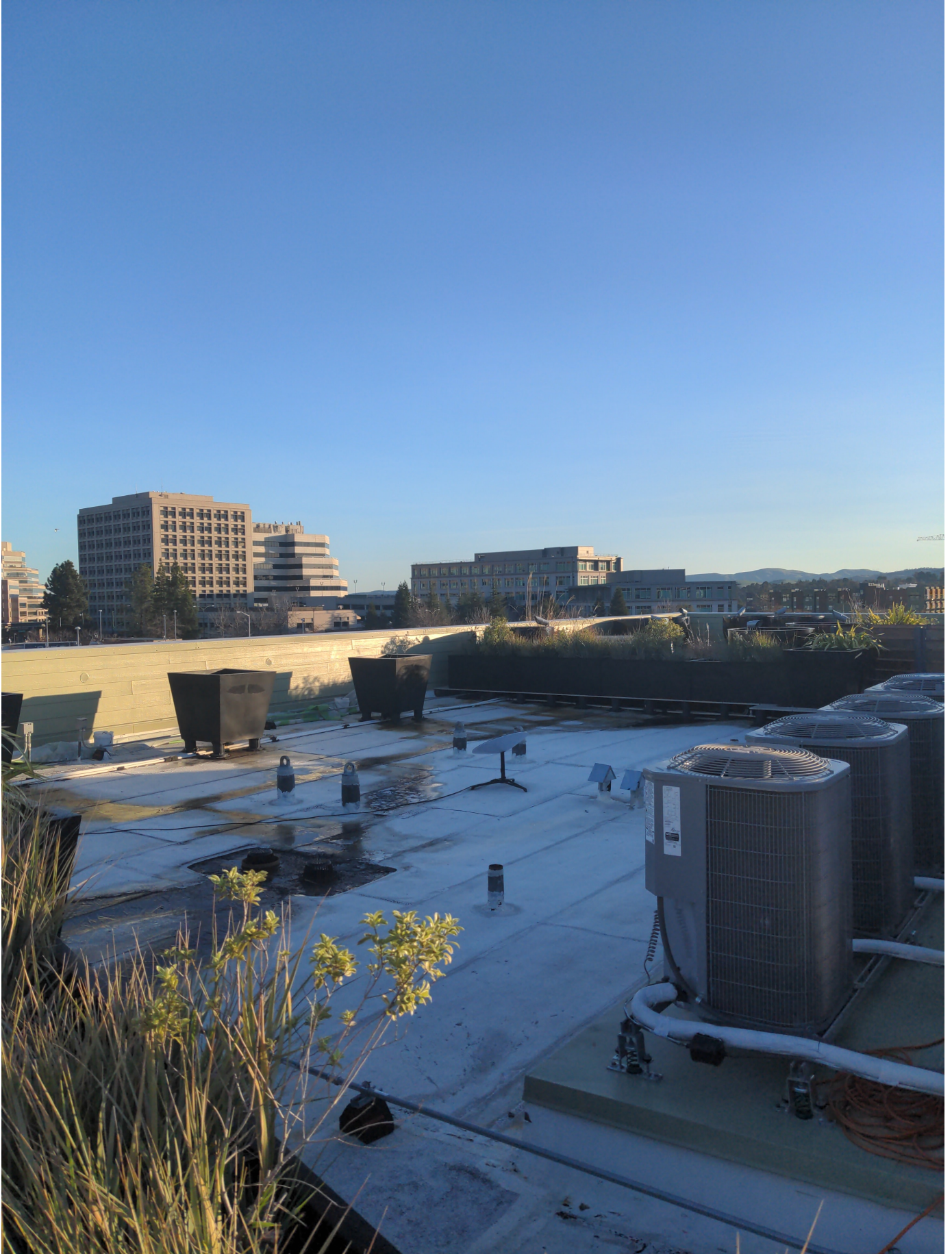
I'll note though that for some reason, in the last decade or so, satellite providers tended to wane or outright disappear in the United States for

reasons that aren't entirely clear to me, and now it seems we've finally gotten them back. So, hopefully this is a good sign that technology is beginning to accelerate again after a long period of stagnation.



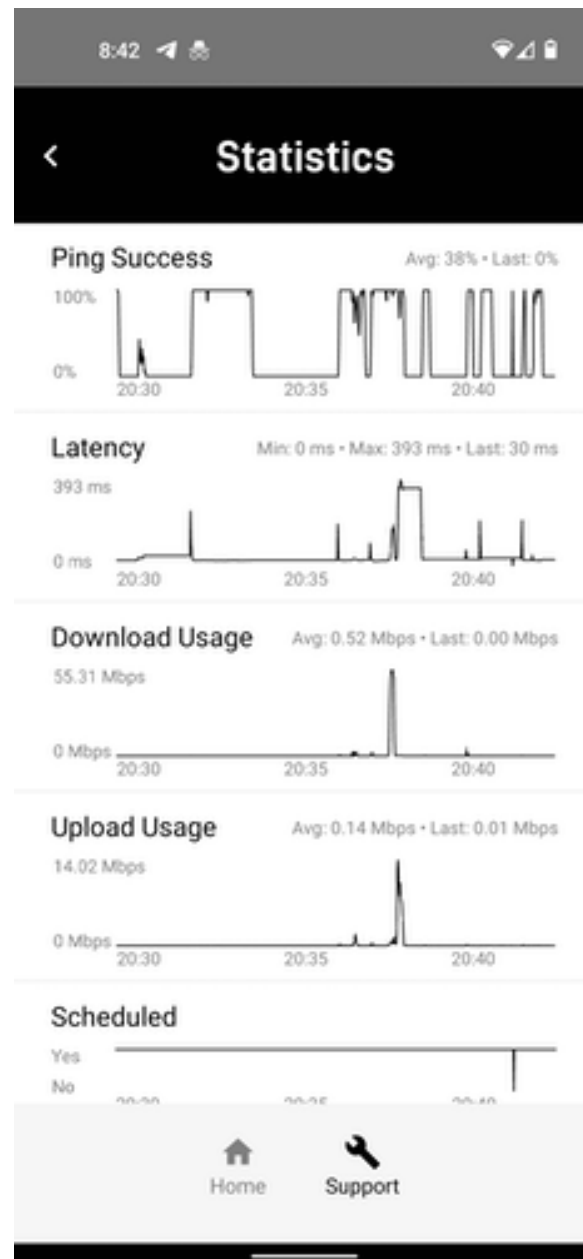
The dish, which comes as a single unit and does not need to be assembled. The cord it connects to is about 20' long (My guess,I didn't measure it). The wedge-shaped object in the foreground / bottom is the modem, which needs to be nearby and pointing to it,

Above is an image of where I've currently placed it, on the roof of my apartment building (*I sure hope this is allowed, but to make up for it, I can't even use it from this distance, since my apartment is on the ground floor, in the opposite building from this one, which has no roof access. So it's there for anyone who wants to use it. There is no wifi-password*).

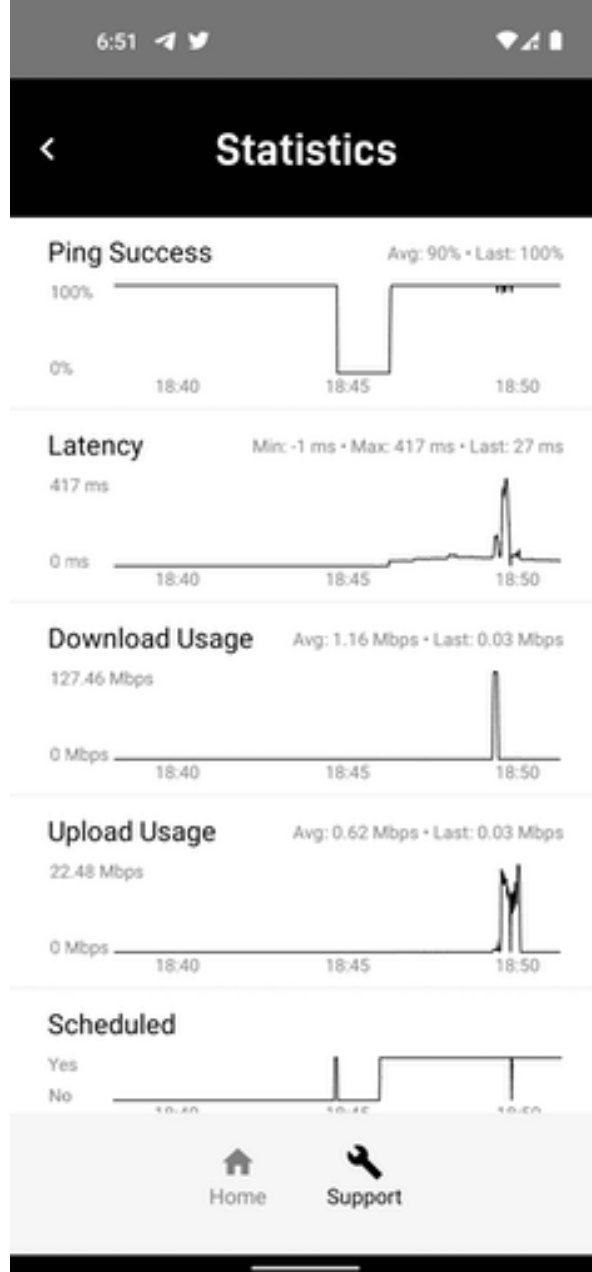


A wider shot of where I installed it. It must have a very clear view of as much of the sky as possible. This day (and today, as of March 5th), we've luckily had beautiful clear skies in Walnut Creek, CA.

I should note that only in theory is installation simple - I for example first tried setting it up in my patio area which has access to the central courtyard. Surprisingly, even literally right outside my back door, it measured about 40% connectivity. (Oh, forgot to mention, yes there is an app. Yes obviously it's required. It's not as bad as AT&T's 3 or 4 apps or however many they require you to use nowadays).



This is a screenshot of the app, when I had the dish on my patio. The top readout labeled “Ping Success” shows you how often the dish is able to make contact with an orbiting satellite. 40% was not enough for a stable connection,



Ahh, that's better. (Now on the roof, where I can only use it when I feel like going up there).

There is only one “level” of service, which makes things simple, but it’s about half as much as a generic internet connection from the default providers. I measured about 140 Mbps flat, and it was very stable and didn’t change much from that rate once my connectivity was more or less 100%. Currently my AT&T “fiber” connection gets about 300 Mbps on average, and back when I had Comcast, they gave me almost twice that for their “fiber” service, but only after I destroyed their modem/router device they force you to purchase for an exorbitant fee even though they insist it is absolutely required, and then replaced it with my own modem and separate router. *I had to purchase the*

Starlink equipment but beyond that, they have not even been charging me for the service at all. I am not getting my hopes up that it will remain that way. No idea what the rate is going to be once it's out of Beta.

The best thing about Starlink from SpaceX's point-of-view is that unruly, overly curious, and problem-customers prone to hacking things would have a much harder time with this.

So now let's talk about the bad parts. Really, I cannot tell if the bad parts are any worse than the cancerous malignant growth that is the modern Internet as a whole, but what I really wanted to talk about here is the massive amounts of infrasound that this thing generates.

You see, this dish is somewhere between a laser and a radio antenna. It's not quite either of those things. As a laser, it would be emitting a single, straight-line, coherent beam of light somewhere in the infrared to visible range, which requires a massive amount of power that can't be pulled out of a typical 110V electrical socket. Also, it would be completely illegal because it would hit aircraft and blind the pilots or whatever, or simply shoot them down that way. It would also be too difficult to hit any orbiting satellites since the beam would be far too narrow. So it needs to have a much wider angle.

But it can't be in the typical frequencies used by normal radio "airwaves", which span a pretty large range, somewhere between 10s of KHz and 10s of GHz or so.

This dish is actually more properly thought of as a Radio Telescope, not a satellite dish, nor an antenna. That being said, there are still major differences.

For one thing, we're not trying to observe any distant galaxies or pulsars or quasars millions of light-years away. What we're trying to do is send a radio signal an extremely long distance. In essence, what we're trying to do is

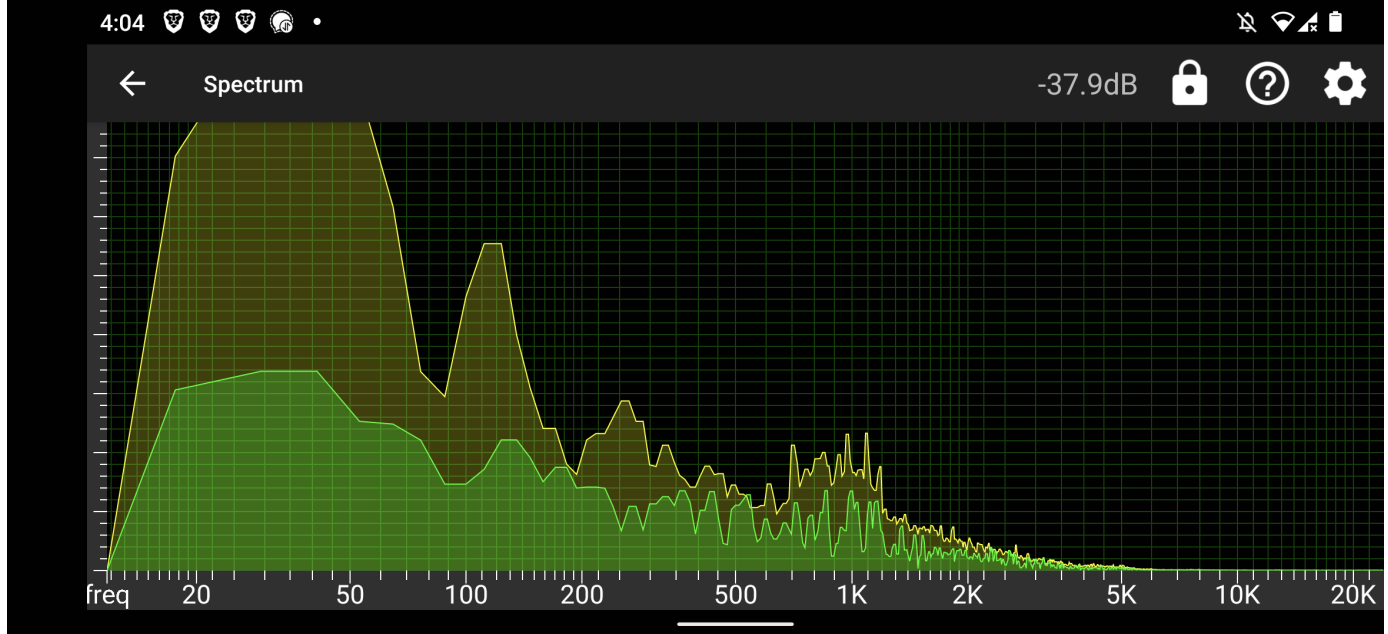
make an “Earth-sized” wi-fi network, using a system of satellites as the “router(s)” for the radio signals.

And furthermore, we’re talking about Extremely Low Frequencies, here. I mean in the 10s of Hertz, that’s Hertz like Hertz rental cars, with no prefixes or anything. As in cycles per second, like the 60Hz humming that you can hear coming from power lines.

The problem with building radio antennas / radio telescopes in the very low to lowest end of the frequency spectrum is that they are believed to require a dish with the diameter proportional to the wavelength of the signal. A wave with somewhere in the vicinity of 20Hz would require a dish the size of the Earth. But if tuned properly so that it’s *exactly* the size of the Earth, then the Earth itself becomes the antenna!

They still need to have a system / network of waveguides, which presumably, in the case of Starlink, consists of a network of low-Earth-orbit satellites, close enough or still technically within the very upper atmosphere, so that the waves never actually touch the satellites, or communicate directly with them, but are in fact guided to their destination by these satellites. In other words, these are not orbiting servers (well they might be, but you’ll never actually hit those servers, you’ll go straight to another ground station, as far as I can tell). This is evidenced by the fact that you don’t get a separate internet altogether with Starlink. You can still use Facebook and Twitter even though their services aren’t literally running on a satellite.

Nevertheless, radio does not work like it typically does at these wavelengths and amount of energy emitted. This is much more like sonar - or rather, what is sometimes called “sodar”, i.e., just sonar through the air as opposed to water. Yes, this was always possible, it just used to be something only the U.S. military knew about for many decades, and suddenly became usable by the public and private technology companies.



Audio spectrum snapshot measured using my smartphone (which has an ultra-good microphone) taken in the vicinity of the Starlink dish.

And, furthermore, as a few of my measurements have shown, Sonar through the air and generated by enormous electrical currents carried by transmission power lines outdoors, close to other antennas, power lines, and throughout large buildings, can have quite a large and significant external impact, IMO. These are very very loud noises being generated, but below the range of human hearing, and to the extent they are within the range of human hearing, they aren't heard as loud noises by the ears, per se. They are "heard" by the nervous system as a whole. This is why DJ's love sub-woofers: By a master DJ who knows how to use them well, they can wield the entire party's emotions in a good, fun way. The U.S. military also figured out how to use them to induce terror and fear in enemy combatants. In theory, they could probably be used to induce pretty much any emotion or set of emotions. This is why I'm a little hesitant about the usage of these things all over the place.

In fact, I've also been using my in-home sound laboratory to study the signals generated by radio, infrasound, ultrasound, and electrical currents all over the local vicinity, and more of those details will come out in future posts. For the time being, I'll just say that - of course in my humble opinion, which I'll be required to back up with robust evidence in due time - this has been a big problem for at least the last year or so, and it's not perpetrated by anyone in

particular, but rather almost all of the telecommunications companies together. Considering what I've stated in the previous paragraph, I think this leads us to some interesting theories about the general state of pandemonium we've been experiencing over the course of 2020 and continuing on into 2021.

Very fascinating, isn't it?



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